

Appl. No. 09/854,421
Response dated September 10, 2004
Reply to Office action of March 10, 2004

In the Claims:

Existing claims are not amended herein.

1. (previously amended) A cylindrical straight slab type gas laser comprising:

a pair of cylindrical electrodes of different diameter disposed vertically and concentrically defining a gap between the cylindrical electrodes filled with laser medium to define a cylindrical straight slab;

a ring-shaped trick mirror disposed at one end of the cylindrical straight slab;

an output mirror disposed at the center of the one end of the cylindrical straight slab to receive light generated by said electrodes, wherein said output mirror is configured to pass a part of the light and to reflect a part of the remaining light; and

a w-axicon mirror disposed at the other end of the cylindrical straight slab, the straight slab being configured to operably maintain the gap between the electrodes without the need for spacers disposed between the electrodes.

2. (previously amended) A cylindrical straight slab type gas laser of claim 1, wherein the two cylindrical electrodes are made from ferromagnetic material that is magnetized to form two or more cylindrical permanent magnetic poles, and the two

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cylindrical electrodes are so that the inner and outer cylindrical permanent magnets repel to one another.

3. (previously amended) A cylindrical straight slab type gas laser of claim 1, wherein the output laser beam from the output mirror has substantially Gaussian intensity distribution when it is focussed by a lens.

4. (previously amended) A cylindrical straight slab type gas laser of claim 1, wherein the output laser beam is applied to cutting machines.

5. (previously presented) A cylindrical straight slab type gas laser of claim 2, wherein the output laser beam from the output mirror has substantially Gaussian intensity distribution when it is focussed by a lens.

6. (previously amended) A cylindrical straight slab type gas laser of claim 5, wherein the output laser beam is applied to cutting machines.

7. (previously amended) A cylindrical straight slab type gas laser of claim 2, wherein the output laser beam is applied to cutting machines.

8. (previously amended) A cylindrical straight slab type gas laser of claim 3, wherein the output laser beam is applied to cutting machines.

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9. (previously presented) A cylindrical straight slab type gas laser comprising:

a pair of cylindrical electrodes of different diameter disposed vertically and concentrically defining a gap between the cylindrical electrodes filled with laser medium to define a cylindrical straight slab;

a ring-shaped trick mirror disposed at one end of the cylindrical straight slab;

an output mirror disposed at the center of the one end of the cylindrical straight slab to receive light generated by said electrodes, wherein said output mirror is configured to pass a part of the light and to reflect a part of the remaining light; and

a w-axicon mirror disposed at the other end of the cylindrical straight slab, the straight slab being configured to provide a sufficiently constant gap between the electrodes without the need for a spacer disposed between the electrodes and between the w-axicon and output mirrors.

10. (previously presented) The cylindrical straight slab type gas laser of claim 9, wherein the cylindrical shaped electrodes are supported at their ends to maintain the gap by the trick, output, and w-axicon mirrors.

11. (previously presented)) A cylindrical straight type gas laser of claim 1, wherein the inner cylindrical electrode of

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the pair of cylindrical electrodes extends at an upper end thereof into the inner circumferential surface of the ring-shaped trick mirror.